

CLAIMS

What is claimed is:

1. A method comprising:
 - receiving in a signal processing subsystem a first signal including a predetermined pattern;
 - receiving in the signal processing subsystem a second signal including the predetermined pattern; and
 - determining by the signal processing subsystem a transmission latency between the received first signal and the received second signal based on the predetermined pattern.
2. The method of claim 1, wherein the first signal is received from a first source and the second signal is received from a second source.
3. The method of claim 1, further comprising:
 - inserting the predetermined pattern in the first and second signals prior to receiving the first and second signals in the signal processing subsystem.
4. The method of claim 1, wherein the determining by the signal processing subsystem further comprising:
 - recording the received first and second signals in a combination waveform; and
 - determining the transmission latency between the received first and second signals from the combination waveform.
5. The method of claim 1, wherein the predetermined pattern is substantially sinusoidal and comprises a predetermined period.
6. The method of claim 5, wherein the predetermined period is greater than a transmission latency period.

7. The method of claim 1, wherein the determining by the signal processing subsystem further comprising:

- obtaining from the first signal a first pattern corresponding to the predetermined pattern;

- obtaining from the second signal a second pattern corresponding to the predetermined pattern;

- determining a first time-position corresponding to the obtained first pattern;

- determining a second time-position corresponding to the obtained second pattern; and

- determining a latency value between the first time-position and second time-position, the transmission latency comprising the determined latency value.

8. The method of claim 1, further comprising:

- receiving in a signal processing subsystem a plurality of first signals each comprising a predetermined pattern;

- receiving in the signal processing subsystem, a plurality of second signals each comprising the predetermined pattern; and

- determining by the signal processing subsystem a transmission latency between the received plurality of first and second signals based on the predetermined pattern.

9. The method of claim 8, wherein the determining by the signal processing subsystem further comprising:

- obtaining a plurality of first patterns corresponding to the predetermined pattern in each of the plurality of first signals;

- obtaining a plurality of second patterns corresponding to the predetermined pattern in each of the plurality of second signals;

- determining a plurality of first time-positions, wherein each first time-position in the plurality of first time-positions corresponding to an obtained first pattern;

determining a plurality of second time-positions, wherein each second time-position in the plurality of second time-positions corresponding to an obtained second pattern; and

determining a plurality of latency values between the first time-positions and the second time-positions, wherein each latency value in the plurality of latency values corresponds to a latency between a first time-position and a corresponding second time-position;

determining an average latency value from the plurality of latency values, the transmission latency comprising the determined average latency value.

10. The method of claim 8, further comprising:

inserting the predetermined pattern in a plurality of first and second signals prior to receiving the plurality of first and second signals in the signal processing subsystem.

11. The method of claim 8, wherein the determining by the signal processing subsystem further comprising:

recording the received plurality of first and second signals in a combination waveform; and

determining the transmission latency between the received first and second signals from the combination waveform.

12. A system comprising:

a pattern insertion subsystem to insert a predetermined pattern into a first signal and a second signal; and

a signal processing subsystem to (i) receive the inserted first signal and the inserted second signal, and (ii) determine a transmission latency between the received signals based on the predetermined pattern.

13. The system of claim 12, the signal processing subsystem further comprising:

a filter subsystem to obtain a first pattern corresponding to the predetermined pattern from the inserted first signal and a second pattern corresponding to the predetermined pattern from the inserted second signal;

a timer subsystem to determine a first time-position corresponding to the obtained first pattern, and a second time-position corresponding to the obtained second pattern; and

a latency determination logic to determine a latency between the first time-position and second time-position wherein the transmission latency comprises the determined latency.

14. The system of claim 12, further comprising:

a recordation subsystem to record the received inserted first and second signals in a combination waveform.

15. The system of claim 14, wherein the recordation subsystem further comprising:

a first input to receive the inserted first signal; and

a second input to receive the inserted second signal.

16. The system of claim 13, wherein

the signal processing subsystem is to receive a plurality of first signals each comprising a predetermined pattern, and a plurality of second signals each comprising the predetermined pattern,

the filter subsystem is to obtain a plurality of first patterns corresponding to the predetermined pattern in each of the plurality of first signals, and to obtain a plurality of second patterns corresponding to the predetermined pattern in each of the plurality of second signals,

the timer subsystem is to determine a plurality of first time-positions, wherein each first time-position in the plurality of first time-positions corresponding to an obtained first pattern, and to determine a plurality of second time-positions, wherein each second time-position in the plurality of second time-positions corresponding to an obtained second pattern, and

the latency determination logic is to determine a plurality of latencies between the first time-positions and the second time-positions, wherein each latency in the plurality of latencies corresponds to a latency between a first time-position and a corresponding second time-position, and to determine an average latency value from the plurality of latencies, the transmission latency comprising the determined average latency.

17. The system of claim 11, wherein the first signal is received from an audio source and the second signal is received from an audio sink.

18. A storage medium that provides software that, if executed by a signal processing subsystem, will cause the signal processing subsystem to perform the following operations:

- receive a first signal comprising a predetermined pattern;
- receive a second signal comprising the predetermined pattern; and
- determine a transmission latency between the received first signal and the received second signal based on the predetermined pattern.

19. The storage medium of claim 18, further comprising software to insert the predetermined pattern into the first and second signals prior to the receipt of the first and second signals in the signal processing subsystem.

20. The storage medium of claim 18, wherein the software, if executed by a signal processing subsystem, will cause the signal processing subsystem to perform the following operations to determine the transmission latency between the received first signal and the received second signal:

- obtain from the first signal a first pattern corresponding to the predetermined pattern;
- obtain from the second signal a second pattern corresponding to the predetermined pattern;
- determine a first time-position corresponding to the obtained first pattern;

determine a second time-position corresponding to the obtained second pattern;
and
determine a latency between the first time-position and second time-position
where in the transmission latency comprises the determined latency.